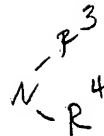


AMENDMENTS TO THE CLAIMS

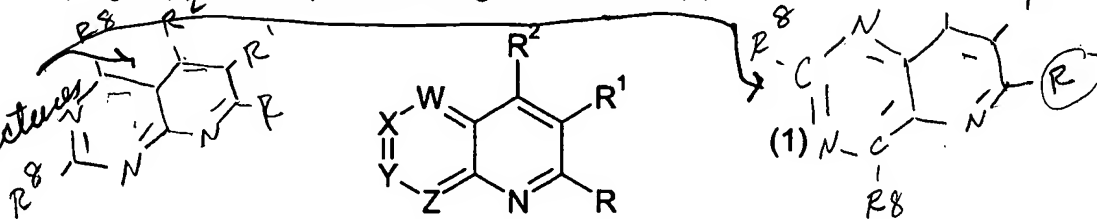
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1. (Original): The compound of the general formula (1):

2 possible
ring structures



wherein

W and Y are both N and X and Z are both CR⁸ or X and Z are both N and W and Y are both CR⁸;

R⁸ is H, halo, C₁₋₄ alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkyl;

R and R² are independently H, halo, C₁₋₈ alkyl, C₁₋₈ alkoxy, C₁₋₈ alkylthio, C₂₋₈ alkenyl, C₂₋₈ alkynyl, cyano or NR³R⁴, provided that at least one of R and R² is NR³R⁴;

R¹ is halo, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₆)alkyl, C₁₋₈ alkoxy, C₁₋₈ alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C₁₋₄)alkyl, aryl(C₁₋₄)alkoxy, heteroaryl(C₁₋₄)alkyl, heteroaryl(C₁₋₄)alkoxy, aryl(C₁₋₄)alkylthio, heteroaryl(C₁₋₄)alkylthio, morpholino, piperidino or pyrrolidino;

R³ and R⁴ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₆)alkyl, heteroaryl, heteroaryl(C₁₋₈)alkyl, NR⁵R⁶, provided that not both R³ and R⁴ are H or NR⁵R⁶, or

R³ and R⁴ together form a C₃₋₇ alkylene or C₃₋₇ alkenylene chain optionally substituted with one or more C₁₋₄ alkyl or C₁₋₄ alkoxy groups, or,

together with the nitrogen atom to which they are attached, R³ and R⁴ form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C₁₋₄)alkyl (especially N-methyl) ring; and

R⁵ and R⁶ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₆)alkyl, heteroaryl or heteroaryl(C₁₋₈)alkyl;

any of the foregoing alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R⁸) being optionally substituted with halogen, cyano, C₁₋₆ alkoxy, C₁₋₆ alkylcarbonyl, C₁₋₆ alkoxy carbonyl, C₁₋₆ haloalkoxy, C₁₋₆ alkylthio, tri(C₁₋₄)alkylsilyl, C₁₋₆ alkylamino or C₁₋₆ dialkylamino,

any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C₁₋₄ alkyl (especially methyl), and

any of the foregoing aryl or heteroaryl groups or moieties being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C₁₋₆ alkyl, C₂₋₈ alkenyl, C₂₋₆

alkynyl, C₁₋₈ alkoxy, C₂₋₈ alkenyloxy, C₂₋₈ alkynyloxy, halo(C₁₋₈)alkyl, halo(C₁₋₈)alkoxy, C₁₋₈ alkylthio, halo(C₁₋₈)alkylthio, hydroxy(C₁₋₈)alkyl, C₁₋₄ alkoxy(C₁₋₈)alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₄)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NR^{'''}R^{'''}, -NHCOR^{'''}, -NHCONR^{'''}R^{'''}, -CONR^{'''}R^{'''}, -SO₂R^{'''}, -OSO₂R^{'''}, -COR^{'''}, -CR^{'''}=NR^{'''} or -N=CR^{'''}R^{'''}, in which R^{'''} and R^{'''} are independently hydrogen, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy, halo(C₁₋₄)alkoxy, C₁₋₄ alkylthio, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₄)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C₁₋₄ alkyl or C₁₋₄ alkoxy; provided that Y is not CCH₃ when W is CH, X and Z are N, R is NHCH₃, R¹ is 2,6-dichlorophenyl and R² is H.

search this also

2. (Original): A compound according to claim 1 wherein W and Y are both N and X and Z are both CH or X and Z are both N and W and Y are both CH.

3. (Currently Amended): A compound according to claim 1 ~~or 2~~ wherein R² is NR³R⁴.

4. (Original): A compound according to claim 3 wherein R is halo.

5. (Currently Amended): A compound according to ~~any one of the preceding claims~~ claim 1 wherein

R³ is C₁₋₈ alkyl, halo(C₁₋₈)alkyl, hydroxy(C₁₋₈)alkyl, C₁₋₄ alkoxy(C₁₋₈)alkyl, C₁₋₄ alkoxyhalo(C₁₋₈)alkyl, tri(C₁₋₄)alkylsilyl(C₁₋₈)alkyl, C₁₋₄ alkylcarbonyl(C₁₋₈)alkyl, C₁₋₄ alkylcarbonylhalo(C₁₋₈)alkyl, phenyl(C₁₋₄)alkyl, C₂₋₈ alkenyl, halo(C₂₋₈)alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl optionally substituted with chloro, fluoro or methyl, C₃₋₈ cycloalkyl(C₁₋₄)alkyl, phenylamino, piperidino or morpholino, the phenyl ring of phenylalkyl or phenylamino being optionally substituted with one, two or three substituents selected from halo, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy and halo(C₁₋₄)alkoxy; and

R⁴ is H, C₁₋₄ alkyl, halo(C₁₋₄)alkyl or amino, or

R³ and R⁴ together form a C₃₋₇ alkylene or alkenylene chain optionally substituted with methyl, or,

together with the nitrogen atom to which they are attached, R³ and R⁴ form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C₁₋₄)alkyl (especially N-methyl) ring, in which the morpholine or piperazine rings are optionally substituted with methyl.

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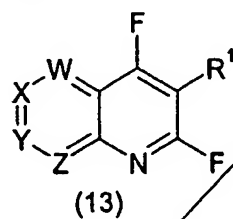
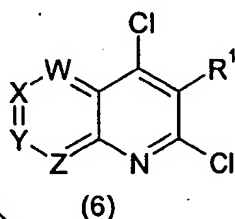
6. (Currently Amended): A compound according to ~~any one of the preceding claims~~ claim 1, wherein
 R¹ is phenyl optionally substituted with from one to five halogen atoms or with from one to three substituents selected from halo, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkoxy, pyridyl optionally substituted with from one to four halogen atoms or with from one to three substituents selected from halo, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkoxy, 2- or 3-thienyl optionally substituted with from one to three halogen atoms or with from one to three substituents selected from halo, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkoxy, or piperidino or morpholino both optionally substituted with one or two methyl groups.
7. (Original): A compound according to claim 6 wherein R¹ is 2,6-difluorophenyl, 2-fluoro-6-chlorophenyl, 2,5,6-trifluorophenyl, 2,4,6-trifluorophenyl, 2,6-difluoro-4-methoxyphenyl or pentafluorophenyl.
8. (Original): A compound according to claim 1 wherein
 W and Y are both N and X and Z are both CR⁸ or X and Z are both N and W and Y are both CR⁸;
 R⁸ is H, halo, C₁₋₄ alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkyl;
 one of R and R² (preferably R²) is NR³R⁴ and the other is halo;
 R¹ is halo, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₈)alkyl, C₁₋₈ alkoxy, C₁₋₈ alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C₁₋₄)alkyl, aryl(C₁₋₄)alkoxy, heteroaryl(C₁₋₄)alkyl, heteroaryl(C₁₋₄)alkoxy, aryl(C₁₋₄)alkylthio, heteroaryl(C₁₋₄)alkylthio, morpholino, piperidino or pyrrolidino;
 R³ and R⁴ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₈)alkyl, heteroaryl, heteroaryl(C₁₋₈)alkyl, NR⁵R⁶, provided that not both R³ and R⁴ are H or NR⁵R⁶, or
 R³ and R⁴ together form a C₃₋₇ alkylene or a C₃₋₇ alkylene chain optionally substituted with one or more C₁₋₄ alkyl or C₁₋₄ alkoxy groups, or,
 together with the nitrogen atom to which they are attached, R³ and R⁴ form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C₁₋₄)alkyl (especially N-methyl) ring; and
 R⁵ and R⁶ are independently H, C₁₋₈ alkyl, C₂₋₈ alkenyl, C₂₋₈ alkynyl, aryl, aryl(C₁₋₈)alkyl, C₃₋₈ cycloalkyl, C₃₋₈ cycloalkyl(C₁₋₈)alkyl, heteroaryl or heteroaryl(C₁₋₈)alkyl;
 any of the foregoing alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R⁸)

being optionally substituted with halogen, cyano, C₁₋₆ alkoxy, C₁₋₆ alkylcarbonyl, C₁₋₆ alkoxy-carbonyl, C₁₋₆ haloalkoxy, C₁₋₆ alkylthio, tri(C₁₋₄)alkylsilyl, C₁₋₆ alkylamino or C₁₋₆ dialkylamino, any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C₁₋₄ alkyl (especially methyl), and any of the aryl, heteroaryl, aryloxy or heteroaryl groups being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₁₋₆ alkoxy, C₂₋₆ alkenyloxy, C₂₋₆ alkynyloxy, halo(C₁₋₆)alkyl, halo(C₁₋₆)alkoxy, C₁₋₆ alkylthio, halo(C₁₋₆)alkylthio, hydroxy(C₁₋₆)alkyl, C₁₋₄ alkoxy(C₁₋₆)alkyl, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothio-cyanato, nitro, -NR^{'''}R^{'''}, -NHCOR^{'''}, -NHCONR^{'''}R^{'''}, -CONR^{'''}R^{'''}, -SO₂R^{'''}, -OSO₂R^{'''}, -COR^{'''}, -CR^{'''}=NR^{'''} or -N=CR^{'''}R^{'''}, in which R^{'''} and R^{'''} are independently hydrogen, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy, halo(C₁₋₄)alkoxy, C₁₋₄ alkylthio, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C₁₋₄ alkyl or C₁₋₄ alkoxy.

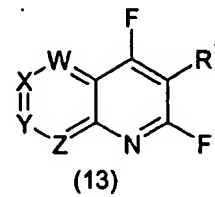
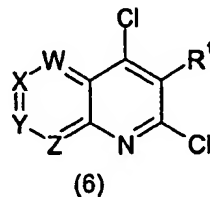
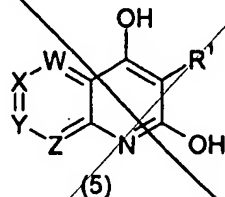
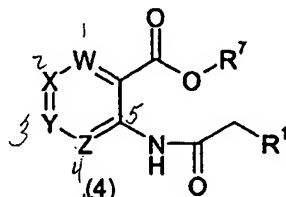
9. (Original): A compound according to claim 1 wherein W and Y are both N and X and Z are both CR⁸ or X and Z are both N and W and Y are both CR⁸;
R⁸ is H, halo, C₁₋₄ alkyl, C₁₋₄ alkoxy or halo(C₁₋₄)alkyl;
one of R and R² (preferably R²) is NR³R⁴ and the other is halo;
R¹ is halo, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₆)alkyl, C₁₋₆ alkoxy, C₁₋₆ alkylthio, aryl, aryloxy, arylthio, heteroaryl, heteroaryloxy, heteroarylthio, aryl(C₁₋₄)alkyl, aryl(C₁₋₄)alkoxy, heteroaryl(C₁₋₄)alkyl, heteroaryl(C₁₋₄)alkoxy, aryl(C₁₋₄)alkylthio, heteroaryl(C₁₋₄)alkylthio, morpholino, piperidino or pyrrolidino;
R³ is C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₂₋₄ alkenyl, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl or phenylamino in which the phenyl ring is optionally substituted with one, two or three substituents selected from halo, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy and halo(C₁₋₄)alkoxy; and
R⁴ is H, C₁₋₄ alkyl or amino, or
R³ and R⁴ together form a C₄₋₆ alkylene chain optionally substituted with C₁₋₄ alkyl or C₁₋₄ alkoxy, or,
together with the nitrogen atom to which they are attached, R³ and R⁴ form a morpholine, thiomorpholine, thiomorpholine S-oxide or thiomorpholine S-dioxide ring or a piperazine or piperazine N-(C₁₋₄)alkyl (especially N-methyl) ring;
any of the alkyl, alkenyl, alkynyl or cycloalkyl groups or moieties (other than for R⁸) being optionally substituted with halogen, cyano, C₁₋₆ alkoxy, C₁₋₆ alkylcarbonyl, C₁₋₆ alkoxy-

carbonyl, C₁₋₆ haloalkoxy, C₁₋₆ alkylthio, tri(C₁₋₄)alkylsilyl, C₁₋₆ alkylamino or C₁₋₆ dialkylamino, any of the foregoing morpholine, thiomorpholine, piperidine, piperazine and pyrrolidine rings being optionally substituted with C₁₋₄ alkyl (especially methyl), and any of the aryl or heteroaryl groups or moieties being optionally substituted with one or more substituents selected from halo, hydroxy, mercapto, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₂₋₆ alkynyl, C₁₋₆ alkoxy, C₂₋₆ alkenyloxy, C₂₋₆ alkynyloxy, halo(C₁₋₆)alkyl, halo(C₁₋₆)alkoxy, C₁₋₆ alkylthio, halo(C₁₋₆)alkylthio, hydroxy(C₁₋₆)alkyl, C₁₋₄ alkoxy(C₁₋₆)alkyl, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenoxy, benzyloxy, benzoyloxy, cyano, isocyano, thiocyanato, isothiocyanato, nitro, -NR^{'''}R^{''''}, -NHCOR^{'''}, -NHCONR^{'''}R^{''''}, -CONR^{'''}R^{''''}, -SO₂R^{'''}, -OSO₂R^{'''}, -COR^{'''}, -CR^{'''}=NR^{''''} or -N=CR^{'''}R^{''''}, in which R^{'''} and R^{''''} are independently hydrogen, C₁₋₄ alkyl, halo(C₁₋₄)alkyl, C₁₋₄ alkoxy, halo(C₁₋₄)alkoxy, C₁₋₄ alkylthio, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkyl(C₁₋₄)alkyl, phenyl or benzyl, the phenyl and benzyl groups being optionally substituted with halogen, C₁₋₄ alkyl or C₁₋₄ alkoxy.

10. (Original): A process for preparing a compound of the general formula (1) according to claim 1 wherein one of R and R² is chloro or fluoro and the other is NR³R⁴ and W, X, Y, Z, R¹, R³ and R⁴ are as defined in claim 1, which comprises reacting an amine of the general formula NR³R⁴ with a compound of the general formula (6) or (13):



11. (Original): The intermediate chemicals having the general formulae (4), (5), (6) and (13):



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wherein W, X, Y, Z and R¹ are as defined in claim 1 and R⁷ is C₁₋₄ alkyl, other than those compounds of the general formula (5) wherein W and Y are both CH and X and Z are both N and R¹ is methyl, ethyl or phenyl, and other than those compounds of the general formula (5) wherein W is CH, Y is CH₃-C and X and Z are both N and R¹ is methyl, ethyl or phenyl,